

REMARKS

By the above amendments, claims 1, 6, 7, 10, and 12 are revised and claim 2 is canceled to place this application in condition for allowance. Currently, claims 1 and 3-16 are before the Examiner for consideration on their merits.

First and in response to the objections to claims 2 and 7, claim 2 has been canceled since it redundantly repeated the limitations of claim 1. However, Applicants submit that claim 7 further limits claim 6 by the recitation of optical focusing system 16 so that this claim is properly dependent on claim 6. Claim 7 is revised to clarify the system 16. In light of the cancellation of claim 2 and argument made above regarding claim 7, the objections to these claims should be withdrawn.

Second, claim 12 is revised to correct the lack of antecedent basis problem.

Third, claim 1 and 6 are revised to clarify the patentable nature of these claims and demonstrate that the rejection applied thereagainst should be withdrawn. Each claim is revised to clarify the illumination means wherein a defect on the surface causes either a lack of light or local concentration of light as a dark spot flare. Support for this amendment may be found in paragraph [0071] of the Applicants' published application (hereinafter the published application).

Claims 1 and 6 are also revised to clarify the nature of the convergent light beam as being delimited between two cones 19 and 20, each converging at the apex F. These two cones can be plainly seen in Figure 1, and are described in paragraph [0061] of the published application.

Fourth, Applicants traverse the rejection of claim 10 under 35 U.S.C. § 112, second paragraph. In this rejection, the Examiner contends that the term “return cone” is indefinite and undefined in the specification. Applicants submit that this term is not indefinite when applying the test for indefiniteness as outlined in MPEP §2173.02. Therein, indefiniteness is measured in terms of the specification and the skill of the art. The return cone is clearly defined in the specification as returning the light beam in a direction perpendicular to the axis of conical mirror 40, see paragraph [0075] of the published application. Therefore, the contention that the return cone is undefined is incorrect and this allegation cannot support an indefiniteness rejection. Also, it is submitted that “return cone” in the context of claim 10 is clearly understood as redirecting the light of light source 44 is the recited direction. Claim 10 is revised to clarify that the function following the return cone is attributable to this element. To summarize, claim 10 is not indefinite and the rejection of this claim should be withdrawn.

Lastly and with the changes to claims 1 and 6, it is submitted that the applied prior art does not establish a *prima facie* case of obviousness.

In the rejection, the Examiner rejects apparatus claims 6, 7, 9, 10, 12, and 14 under 35 U.S.C. § 102(b) based on United States Published Patent Application No. 2001/0048524 to Sones. Method claims 1-4, 11, and 16 are rejected under 35 U.S.C. § 103(a) based on Sones and United States Patent No. 6,025,909 to Juvinal et al. (Juvinal). Claim 5 is rejected based on the combination of Sones and Juvinal when further combined with United States Patent No. 5,095,204 to Novini.

Applicants contend that the rejection based on Sones is improper for two reasons. First, Sones does not teach the method of illuminating or the illumination means as now defined in claims 1 and 6. Second, the uniform ring of light delimited by the two cones with a single apex is not found in Sones.

Turning to the first argument, Sones teaches a dark field illumination, which is explained in paragraph 3 as the sealing surface not being visible or barely visible in the image.

Claims 1 and 6 are revised to define the illuminating means in terms of the defects occurring as either a lack of light or dark spot flare, which is a light field illumination, which is also defined in Sones, see paragraph [0003].

Since claim 6 calls for an illumination means that is a light field illumination and Sones teaches a dark field illumination device, Sones cannot be said to anticipate this claim and the rejection based on 35 U.S.C. § 102(b) must be withdrawn.

Lacking a basis for anticipation in this regard, the Examiner can only reject claim 6 under 35 U.S.C. § 103(a) if there is a legitimate reason to modify Sones and employ light field illumination. It is submitted that there is no reason for doing so. In fact, Sones recognizes that both types of illumination exist and specifically focuses on dark field illumination. In the face of this recognition, it is argued that Sones has rejected light field illumination and teaches away from modifying his device to employ the claimed method of detecting defects.

To allege that Sones could be modified so as to employ light field illumination is the use of hindsight and Applicants' invention to construct a rejection based on 35

U.S.C. § 103(a). Since hindsight cannot be employed to support an obviousness rejection, any such rejection could not be sustained on appeal.

While claim 1 is rejected under 35 U.S.C. § 103(a), the issue of obviousness in the rejection focuses on an alleged lack of a light scan device and the obviousness of using such a device in Sones method given the teachings of Juvinal. Notwithstanding the teachings of Juvinal, Sones does not teach a light field illuminating step as now defined in claim 1. Thus, even if Sones were modified in light of the teachings of Juvinal, the method of claim 1 is still not taught.

As is argued above for claim 6, there is no legitimate reason to arrive at the invention of claim 1 through the modification of the teachings of Sones absent reliance on Applicants' invention as a teaching template.

For the reasons set out above regarding the failure of Sones to teach a light field illumination step or means, claims 1 and 6 are patentable over Sones.

Claims 1 and 6 also define that the convergent light beam is delimited between two cones converging to a point of convergence F. This defines a width associated with the convergent beam of light, which is E as shown in Figure 1.

The feature of claims 1 and 6 regarding the convergent light beam, its delimitation by two cones to a point of convergence F, and a defined width is not found in Sones.

Sones does not disclose the claimed convergent light beam. Rather, Sones discloses an illumination system that uses a single cone, emitted from one light cone having an apex 60. Lacking the convergent light beam being delimited by two light

cones as now defined in claims 1 and 6, Sones cannot be said to anticipate claim 6 or render claim 1 obvious.

In addition, there is no reason to modify Sones and arrive at the invention without again using Applicants' invention as a teaching template.

Further, the secondary references do not make up for the failings of Sones. Juvinal discloses a container sealing surface area inspection with a narrow collimated beam 46 of light energy downwardly at an acute angle onto sealing surface 36. The light beam 46 comprises a collimated line shaped light beam. This cannot be interpreted as the same as that claimed and even if Juvinal were combined with Sones, the converging light beam of claims 1 and 6 is not present.

Novini also does not teach the invention. Novini relates to a machine for optical inspection of the bottom surfaces of transparent containers, which contrasts with the aim of the invention and inspecting the neck ring of containers. Therefore, it cannot be said that Novini teaches the features of the invention that are missing in Sones, and combining Novini with Sones does not establish a *prima facie* case of obviousness against either of claims 1 or 6.

To summarize, Sones cannot anticipate claim 6 since Sones fails to teach a device or method which uses light field illumination as now defined in the claims as well as the defined convergent light beam. Similarly, claim 1 is distinguishable from Sones for these reasons. The secondary references to Juvinal and Novini do not make up for the deficiency in Sones and a *prima facie* case of obviousness is not established even if these references are used to modify Sones.

Accordingly, the Examiner is requested to examine this application in light of this Amendment and pass all pending claims onto issuance.

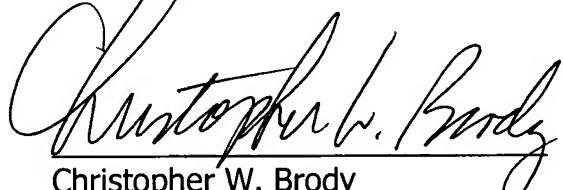
If the Examiner believes that an interview would be helpful in expediting the allowance of this application, the Examiner is requested to telephone the undersigned at 202-835-1753.

The above constitutes a complete response to all issues raised in the Office Action dated August 2, 2007.

Again, reconsideration and allowance of this application is respectfully requested.

A petition for a two month extension of time is made. A check in the amount of \$230.00 is attached to cover the cost of the petition. Please charge any fee deficiency or credit any overpayment to Deposit Account No. 50-1088.

Respectfully submitted,
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